

## Adenocarcinoma of the Appendix with Lymph Node Metastasis: A Case Report

Tiago Ferrari<sup>1</sup>, Ariana Ferrari<sup>2</sup>, Guilherme Munhoz Lopes<sup>1</sup>, Juliano Fabricio dos Santos Neto<sup>1</sup>, Luiz Ricardo Campelo<sup>1</sup>, Guilherme Telles Hahn<sup>1</sup>.

<sup>1</sup>Hospital Santa Rita de Maringá

<sup>2</sup>Centro Universitário de Maringá – Unicesumar

### Abstract

Adenocarcinoma of the cecal appendix is a malignant tumor of rare affection, occurring in the range of 0.001 to 0.2 per 100,000 person/year. Usually affects young adults. Its main clinical manifestation is acute appendicitis, making early diagnosis difficult. It is commonly found in the distal portion of the appendix and is most often discovered only in the anatomopathological examination (AP) of a surgical specimen of appendectomy. We report a case of a 61-year-old patient, presenting pain in the hypogastro region, which radiated to the right iliac fossa, when it increased in intensity. In surgery, an appendix of Grade III was identified, with AP describing Adenocarcinoma of the Appendix. In this way, a right hemicolectomy associated with lymphadenectomy by laparotomy was performed, in the second time, whose AP identified lymph node metastasis.

**Keywords:** Appendiceal Neoplasms. Adenocarcinoma. Appendicitis. Colectomy. Lymph Node Metastasis.

### Introduction

The adenocarcinoma of the cecal appendix is a rare affection and its incidence in anatomic part from an appendectomy is low(1,2,3,4). The annual occurrence of this type of neoplasia varies from 0,001 to 0,2 in every 100.000 people, being part of 3% to 6% of the malignant tumors in this segment(3,5) and making up 0,5% of all cases of malignant gastrointestinal neoplasias (4). Besides, it is highlighted that 63,5% of the appendix tumor has benign characteristics (5).

The appendix carcinoma occurs, usually, in young adults aging around 40 years old and, less frequently, in older people(6), being the men more affected than women(7). Commonly, the tumors are found in the distal portion of the appendix, having, in most of the time, less than 1 cm(6). A small amount of these tumors are found in the base of this tube, therefore, it is responsible for causing the ostium obstruction infered or for arousing its mucocele (6).

The main clinical manifestation of the adenocarcinoma of the appendix is the sharp appendicitis, a purulent and inflammatory process, resulting, most commonly, for the difficulty to drain the cecal appendix content (4). This way, frequently an appendectomy preceeds the diagnosis of appendix neoplasia. From the late findings, the possibility of metastasis increases, because the staging system, most of the time, occurs only after the appendix excision (6).

If confirmed the adenocarcinoma of the cecal appendix, the envisioned treatment does not depend on the size of the tumor and follows with right hemicolectomy, carried out in a second

time (11, 12). Patients in which the tumor invaded surrounding structures must undergo a resection in monobloc, combining the right hemicolectomy an excision of the invaded organs (8, 11, 12, 13). Adjuvant therapy, with radiotherapy and chemotherapy, are used just in cases in which the tumour was locally progressed, using the same criteria of the colonic adenocarcinomas (9).

The survival rate in 5 years in cases of appendicular adenocarcinoma are of 95 %(11). When distant metastasis are present, these rates are reduced to 0 %(11). A bad prognosis is characterized by an advanced stage of histological presence, with a high degree dysplasia and a tumor with not mucinous characteristics (8). Other criteria of bad prognosis are the findings of peritoneal pseudomyxoma, abdominal distension, loss of weight and morphological evidences of underlying structures invasion (11).

### **Case Report**

S.A.D.G., female, 61 years old, looked for immediate attention at Santa Rita Hospital in Maringá, having pain in the hypo gastric region lasting for 24 hours, the steady type, but with exacerbation at wandering or coughing, with no improvement factors. She described that, with approximately 10 hours of evolution, the pain irradiated to the right iliac nasal cavity, when it increased the intensity.

In the clinical stage at the admission in the hospital, she also referred to epigastric discomfort with nauseas, but with no vomits, in addition to hyporexia. She said she had no urinary symptoms nor fever and she said she had preserved intestinal habits.

In the physical exams, the patient showed a good general state, with no sign of shock or disease severity. The abdomen was still flaccid, but sore to superficial and deep palpation in all hypogastric, with sign of positive blumberg.

In this initial care, it was asked laboratorial exams, CT scam of the abdomen with endogenous contrast and the evaluation of a general surgeon, with the thoughts of a severe appendicitis in mind.

In the laboratorial exams, the patient presented a light leukocytosis without a left deviation, associated to a considerable increase in the C reactive protein. The other exams, as hepatic function and aggression, besides the urine routine, were in the regular value.

The abdomen tomography showed a blurring of fat in the right iliac fossa, associated with free liquid in the pelvis, which corroborated the diagnosis of sharp appendicitis, being the patient directed to appendectomy.

The surgery, by open technique, occurred without complications. It was identified an appendicitis Level III, with necrosis signs and local abscess. The surgical part was sent to histopathological exam (AP). The patient was released on the third day after the surgery and directed to return with the result of the AP.

In the return, the patient brought the AP that showed differentiated moderate adenocarcinoma, measuring 1,7 centimeters, and with infiltrative aspect, invading the subserosal periappendicular

fatty tissue and of mesoappendix, without angiolymphatic invasion or neural, obtaining a staging TNM of pT3 pNx pMx. It also presented a venous tubule adenoma with dysplasia of high level associated in the part.

It was requested back up image exams with the purpose of active search of metastasis. The patient had a CT scan in the chest and cranium, both without metastasis evidence.

This way, it was opted the execution of a Right Hemicolectomy by laparotomy associated to a mesenteric lymphadenectomy (figure 1) with primary anatomises, procedure that occurred three weeks after and which had no complications.



Figure 1. Surgical Part – Right Hemicolectomy with Mesenteric lymphadenectomy.

With the result of the AP of the product, the right ileocelectomy associated with the lymphadenectomy, the patient proceeds to her health assistance. In this exam, it was described implants of adenocarcinoma in subserosal, with mucinous standard areas. The appendicular ostium, although, it showed free from neoplasia and the borders of the surgical part were free from it. However, the exam showed, besides the tumor deposits in the organ surrounding fatty tissue, also the presence of metastasis in a lymph node from the 19 dissected, lymph o vascular invasion and perineural were not detected.

Given the findings of the AP, the patient was, consequent, directed to the Oncology Clinic ambulatory, to continue the treatment, aiming the adjuvant treatment with chemotherapy and radiotherapy.

## Discussion

The adenocarcinoma of the appendix is a rare illness and that reaches mainly the male sex and young adults, aging on average 40 years old (6). The case presented does not endorse with the presented epidemiology in literature, as the patient is a female sex and aging above 60 years old.

The clinical presentation of the studied patient was the classic way, in other words, as sharp appendicitis. The clinical picture covers pain, immediate start, located in the periumbilical region and in most of the cases; it is followed by nausea and vomits (11). After a few hours, the pain concentrates in the right iliac fossa, next to the McBurney point, indicating the peritonitis periappendicular impairment (11). The fever, in this case, does not usually increase, and it gets close between 37, 5 to 38°C(11).

The main signals and symptoms from the adenocarcinoma of the appendix, apart from the appendicitis manifestations, include, as cited, touchable abdominal mass, peritonitis, unspecific abdominal pain, swelling and abdominal rigidity (9,10).

It is described in the literature, clinical manifestations uncommon to the illness, such as pelvic mass with urinary signals, hydronephrosis, bladder infiltration, vaginal bleeding, melena and intussusception (3), although they were not found in the case.

As observed in the present study, the literature points out that from its etiology of sharp appendicitis(1), most of the patients with these symptoms are directed to surgery without suggesting the hypothesis of neoplasia, which forces to decide for the urgent treatment. This occurs because its diagnosis, in most of the cases, is obtained just in the surgical part AP (2).

Being suggested the diagnosis of adenocarcinoma of the appendix, it may highlight histologically if there were mural invasion or the presence of metastasis, including the peritoneal cavity spread (6). The AP exam of the product of appendectomy showed an advanced tumor, in which the neoplasia had already invaded the subserosal of the organ. The main reason of this advance is the age of the patient, which lead to the hypothesis of being an old lesion. It is important to emphasize that the exam also showed another tubular-villous adenoma with dysplasia of high level, and being considered a premalignant lesion that could evolve to another adenocarcinoma (7,10).

Since the not invasion of the surrounding structures and the absence of metastasis to distance, described in the AP of the surgical part of appendix, it was opted for a right colectomy in a second time, as widespread in the academic environment, as a healing treatment way of the illness (1,2,3,4,5,6). However, with the result of the AP of the product of the right hemicolectomy, and the presence of lymphomodal metastasis became imperative the supervision with an Oncology Clinic, considering the stage changes of the illness and the necessity of carrying on an adjuvant treatment (9).

Therefore, the adenocarcinoma of the appendix is a rare illness but it shows present in the surgeon daily life. This fact rises the importance of the histopathological exam, not being neglected at excising an anatomic part. It is fundamental that the surgeons have knowledge of the characteristics of tumors that affect the cecal appendix, so that it is adopted more insightful procedures before the situation.

---

**References**

- Henriques AC, Gomes M, Bragarollo CA. Appendiceal carcinoma: report of two cases. *Rev Col Bras Cir.* 2001; 28: 393-395.
- Lopes Juniot AG, Saqueti EE, Cardoso LTQ. Tumor do apêndice vermiforme. *Rev Col Bras Cir.* 2001; 28: 228-229.
- Mércio AAP, Weindorfer M, Weber AL, Mano AC. Neoplasias malignas primárias de apêndice cecal. *Medicina.* 1999; 32: 193-8.
- Komm M, Kronawitter-Fesl M, Kremer M, Lutz L, Holinski-Feder E, Kopp R. Primary mucinous adenocarcinoma of the vermiform appendix with high grade microsatellite instability. *J Cancer.* 2011; 2:302-6.
- Formiga GJS, Da Silva JH. Adenocarcinoma do apêndice cecal - Relato de três casos. *Rev bras Coloproct.* 1997; 17:245-247.
- Suárez-Grau JM, García-Ruiz S, Rubio-Chaves C, Bustos-Jiménez M, Docobo-Durantez F, Padillo-Ruiz FJ. [Appendiceal carcinoid tumors. Evaluation of long-term outcomes in a tertiary level]. *Cir Cir.* 2014; 82:142-9.
- Capella C, Solcia E, Sobin LH, Arnold R. Endocrine tumours of the small intestine. In: Hamilton SR, Aaltonen LA, eds. *Pathology and Genetics of Tumours of the Digestive System.* Lyon, France: IARC Press; 2000: 93-8.
- Yamada T, Murao Y, Nakamura T et al. Primary adenocarcinoma of appendix, colonic type associated with perforating peritonitis in an elderly patient. *J Gastroenterol* 1997; 32: 658-62.
- Ahmed K, Hoque R, El-Tawil S, Khan MS, George ML. Adenocarcinoma of the appendix presenting as bilateral ureteric obstruction. *World J Surg Oncol.* 2008; 6:23.
- Hu CC, Chang JJ, Chen TC, Yen CL, Chien RN. Colonoscopic feature of primary adenocarcinoma of the appendix. *Intern Med.* 2008; 47:255-7.
- Connor SJ, Hanna GB, Frizelle FA. Appendiceal tumors: retrospective clinicopathologic analysis of appendiceal tumors from 7,970 appendectomies. *Dis Colon Rectum.* 1998; 41:75-80.
- Hartley JE, Drew PJ, Qureshi A et al. Primary adenocarcinoma of the appendix. *J R Soc Med* 1996; 89:111P-3P.
- Proulx GM, Willet CG, Daley W et al. Appendiceal carcinoma: patterns of failure following surgery and implications for adjuvant therapy. *J Surg Oncol* 1997; 66: 51-3.